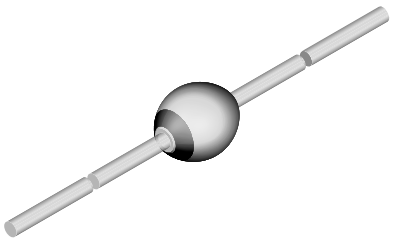
Ultra-Fast Avalanche Sinterglass Diode



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FEATURES

- Glass passivated
- Hermetically sealed axial leaded glass envelope
- Low reverse current
- High reverse voltage
- Material categorization:
  For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

APPLICATIONS

- Switched mode power supplies
- High-frequency inverter circuits

MECHANICAL DATA

Case: SOD-57

Terminals: plated axial leads, solderable per MIL-STD-750, method 2026

Polarity: color band denotes cathode end

Mounting position: any

Weight: approx. 369 mg

ORDERING INFORMATION (Example)

DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
SF4007	SF4007-TR	5000 per 10" tape and reel	25 000
SF4007	SF4007-TAP	5000 per ammopack	25 000

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
SF4001	V_R = 50 V; $I_{F(AV)}$ = 1 A	SOD-57
SF4002	V_R = 100 V; $I_{F(AV)}$ = 1 A	SOD-57
SF4003	V_R = 200 V; $I_{F(AV)}$ = 1 A	SOD-57
SF4004	V_R = 400 V; $I_{F(AV)}$ = 1 A	SOD-57
SF4005	V_R = 600 V; $I_{F(AV)}$ = 1 A	SOD-57
SF4006	V_R = 800 V; $I_{F(AV)}$ = 1 A	SOD-57
SF4007	V_R = 1000 V; $I_{F(AV)}$ = 1 A	SOD-57

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	SF4001	$V_R = V_{RRM}$	50	V
		SF4002	$V_R = V_{RRM}$	100	V
		SF4003	$V_R = V_{RRM}$	200	V
		SF4004	$V_R = V_{RRM}$	400	V
		SF4005	$V_R = V_{RRM}$	600	V
		SF4006	$V_R = V_{RRM}$	800	V
		SF4007	$V_R = V_{RRM}$	1000	V
Peak forward surge current	t_p = 10 ms, half sine wave		I_{FSM}	30	A

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)					
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**VALUE**	**UNIT**
Average forward current	Lead length l = 10 mm		I_{FAV}	1	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	°C
Non repetitive reverse avalanche energy	$I_{(BR)R}$ = 0.4 A		E_R	10	mJ

MAXIMUM THERMAL RESISTANCE (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Junction ambient	Lead length l = 10 mm, T_L = constant	R_{thJA}	45	K/W
	On PC board with spacing 25 mm	R_{thJA}	100	K/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 1 A	SF4001	V_F	-	-	1	V
		SF4002	V_F	-	-	1	V
		SF4003	V_F	-	-	1	V
		SF4004	V_F	-	-	1	V
		SF4005	V_F	-	-	1.7	V
		SF4006	V_F	-	-	1.7	V
		SF4007	V_F	-	-	1.7	V
Reverse current	$V_R = V_{RRM}$		I_R	-	-	5	µA
	$V_R = V_{RRM}$, T_j = 125 °C		I_R	-	-	50	µA
Reverse breakdown voltage	I_R = 100 µA	SF4001	$V_{(BR)R}$	50	-	-	V
		SF4002	$V_{(BR)R}$	100	-	-	V
		SF4003	$V_{(BR)R}$	200	-	-	V
		SF4004	$V_{(BR)R}$	400	-	-	V
		SF4005	$V_{(BR)R}$	600	-	-	V
		SF4006	$V_{(BR)R}$	800	-	-	V
		SF4007	$V_{(BR)R}$	1000	-	-	V
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A	SF4001	t_{rr}	-	-	50	ns
		SF4002	t_{rr}	-	-	50	ns
		SF4003	t_{rr}	-	-	50	ns
		SF4004	t_{rr}	-	-	50	ns
		SF4005	t_{rr}	-	-	75	ns
		SF4006	t_{rr}	-	-	75	ns
		SF4007	t_{rr}	-	-	75	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

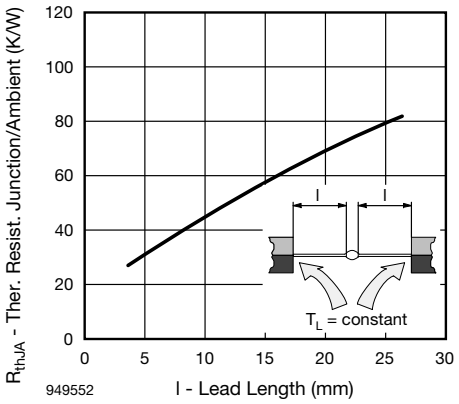


Fig. 1 - Max. Thermal Resistance vs. Lead Length

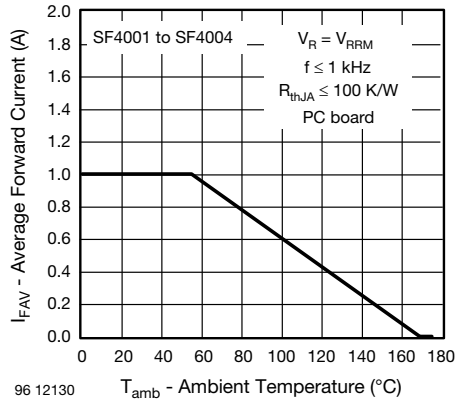


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

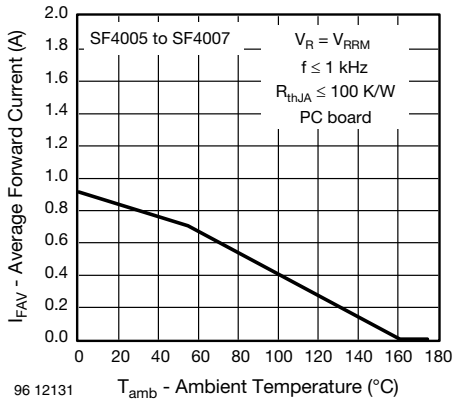


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

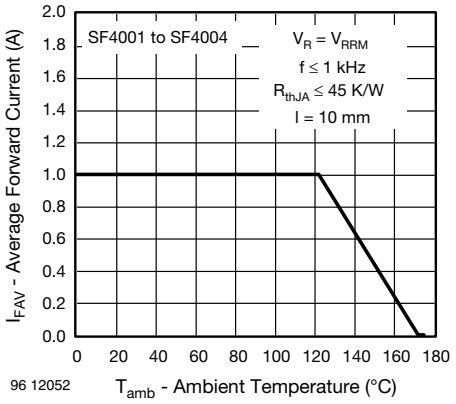


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

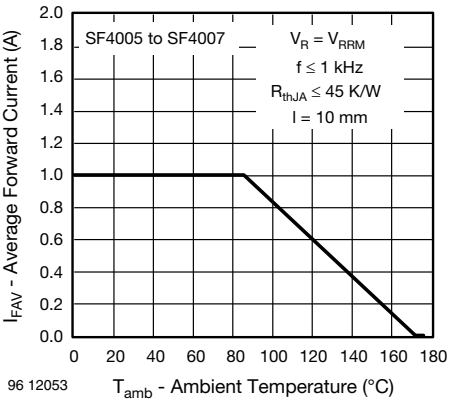


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

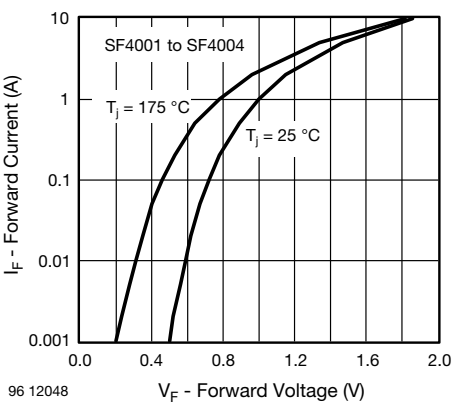


Fig. 6 - Max. Forward Current vs. Forward Voltage

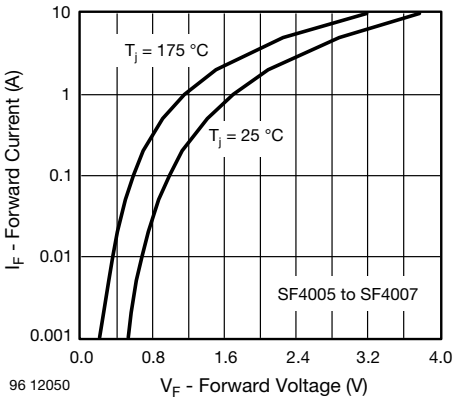


Fig. 7 - Max. Forward Current vs. Forward Voltage

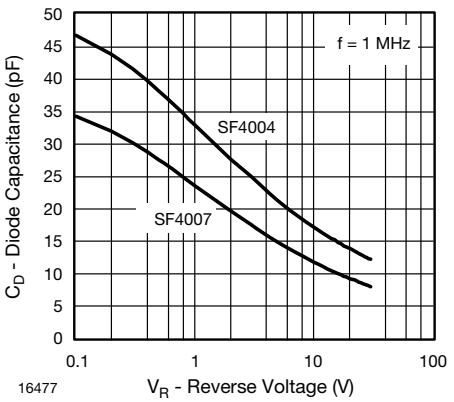


Fig. 10 - Diode Capacitance vs. Reverse Voltage

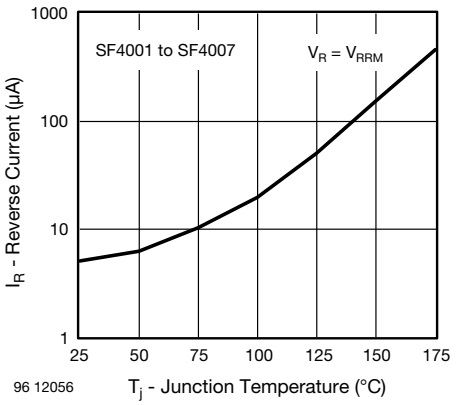


Fig. 8 - Max. Reverse Current vs. Junction Temperature

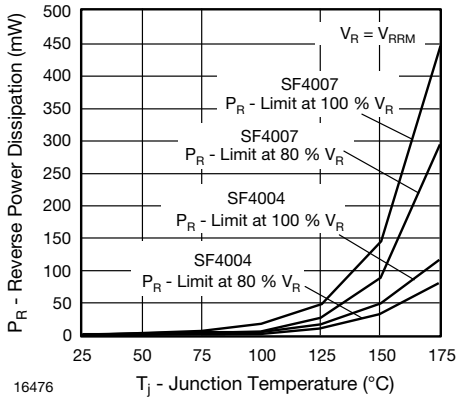
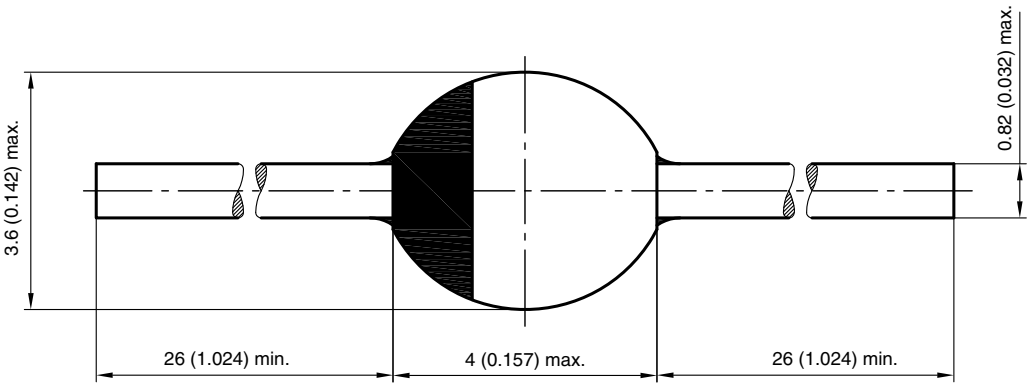


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

PACKAGE DIMENSIONS in millimeters (inches): **SOD-57**



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